

# RANA SALEM

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## Experience

### Junior Software Developer

Jan 2024-present

DEFRA (Department for Environment, Food and Rural Affairs)

- Contracted through FDM Group to join the Farming Front Door (FFD) team as a junior software developer (specialising in Node.js) under the Farming and Countryside Programme (FCP).

### IT Consultant

Apr 2023-present

FDM Group

- Working with one of FDM's public sector clients (Department for Environment, Food and Rural Affairs) as a junior software developer.
- Awarded the Tech Industry Gold Foundation Credential in Software Development for showcasing proficiency in Java, SQL, Unix, HTML, CSS, Spring Boot, Microservices, REST APIs, React, JavaScript, Git.

### Laboratory Demonstrator

2022-2023

Glasgow Caledonian University

- Excelled as a teaching assistant, mentoring final year undergraduates and a PhD candidate, while demonstrating the use of laboratory equipment for independent research.
- Prioritised safety by enforcing health and safety measures during student's time in the laboratory, fostering a secure and safe learning environment.

### Royal Society of Chemistry (RSC) Research Enablement Scholarship

May-Aug 2022

Glasgow Caledonian University & University of Glasgow

- Explored the effects of established textile conservation protocols on historic textile artefacts, with results presented as a poster and flash talk at the Microscience Microscopy Congress (MMC2023) in Manchester, England.
- Utilised advanced tools including AFM, SEM, and fluorescence spectroscopy to generate project data.

### Postgraduate Research Intern (PUBLISHED)

Jul-Sep 2021

Glasgow Caledonian University & University of Glasgow

- Examined the effects of textile cleaning on historic cotton textiles using advanced instrumentation: AFM and UV/Vis (Ultraviolet/Visible) spectroscopy.
- The research was published in the peer-reviewed Heritage Science journal.

### Royal Microscopical Society (RMS) Summer Studentship (PUBLISHED)

Jun-Aug 2020

Glasgow Caledonian University & University of Glasgow

- Analysed textile fibres pre- and post-cleaning with established conservation protocols, with findings published in Infocus Magazine (an RMS publication).
- Featured a poster at the Microscience Microscopy Congress (MM2021) and delivered a local presentation to staff and students from the RMS and partner universities.

## Projects

### Personal Website | [ranasalem.io](https://ranasalem.io) | [github.com/rtasalem/ranasalem.io](https://github.com/rtasalem/ranasalem.io)

- **Summary:** My personal portfolio website where I share my career history, projects, and write for my blog.
- **Role:** Frontend developer and maintainer
- **Tech stack:** TypeScript, Next.js, DaisyUI, Contentlayer, MDX (Markdown + JSX)

### Busgres | [npmjs.com/package/busgres](https://npmjs.com/package/busgres) | [github.com/rtasalem/busgres](https://github.com/rtasalem/busgres)

- **Summary:** Busgres is a Node.js package that will receive a message from Azure Service Bus queues/topics and writes the data into a PostgreSQL database. Configurable with a single client.
- **Role:** Developer and maintainer
- **Tech stack:** JavaScript, Node.js, NPM (Node Package Manager), Azure Service Bus, PostgreSQL

### Draft My CV | [draftmycv.co.uk](https://draftmycv.co.uk) | [github.com/rtasalem/draft-my-cv](https://github.com/rtasalem/draft-my-cv)

- **Summary:** Online form for generating a professional, ready-to-use CV in Microsoft Word or PDF format from user input. Streamlines job applications.
- **Role:** Full stack developer and maintainer
- **Tech stack:** JavaScript, Node.js, NPM (Node Package Manager), Azure Service Bus, PostgreSQL

### Barbie E-commerce Website | [github.com/rtasalem/barbie-ecommerce-website](https://github.com/rtasalem/barbie-ecommerce-website)

- **Summary:** E-commerce website selling Barbie-themed outfits. Capabilities of the website include being able to add items to a shopping basket or wish list and searching for items either by name, description, or category.
- **Role:** Backend developer (in a team of 7)
- **Tech stack:** Java, Spring Boot, REST API, JUnit, Mockito, JavaScript, React, HTML, CSS

### Take A Bao Shop Menu | [github.com/rtasalem/take-a-bao-shop-menu](https://github.com/rtasalem/take-a-bao-shop-menu)

- **Summary:** Read-only online menu for a pop-up bao bar that also acts as a fundraising platform.
- **Role:** Full stack developer
- **Tech stack:** Java, Spring Boot, REST API, Postman, JavaScript, React, HTML, CSS

## Education

### **Master of Science w/ Merit, Forensic Science** **2021-2022**

University of Strathclyde, MSc (Glasgow, Scotland)

- **Dissertation:** *Are Established Bleaching Practices in Textile Conservation Damaging Historic Treasures? A Microscopic and Spectroscopic Investigation.*

### **Bachelor of Science w/ 1<sup>st</sup> Class Honours, Forensic Investigation** **2017-2021**

Glasgow Caledonian University, BSc (Hons) (Glasgow, Scotland)

- **Dissertation:** *Analysis of the Effect of Conservation Bleaching Methods on Historic Textiles.*

### **Erasmus+, Degree Programme in Laboratory Sciences** **Aug-Dec 2019**

Metropolia University of Applied Science (Helsinki, Finland)

- A semester spent as an exchange student in Helsinki, Finland.

## Publications & Presentations

### PUBLICATIONS

Salem, R.T.A., Thompson, K., Uttamlal, M. *Bleaching cotton in textile conservation: a closer look using atomic force microscopy.* Heritage Science. 2022;10:195. <https://doi.org/10.1186/s40494-022-00830-2>.

Salem, R. *RMS Summer Studentship Report: Microscopic Analysis of Historic Textile Fibres Pre- and Post-Cleaning.* Infocus Magazine: Proceedings of the Royal Microscopical Society. 2020;60:32-35. <https://doi.org/10.22443/rms.inf.1.194>.

### PRESENTATIONS

#### **Microscience Microscopy Congress (MMC2023)** **Jul 2023**

Salem, R.T.A., Thompson, K., Uttamlal, M. *Microscopic Analysis of New and Historic Cotton Fibre Cross-Sections.* Microscience Microscopy Congress 2023. Manchester Central Convention Complex (Manchester, England).

#### **Microscience Microscopy Congress (MMC2021)** **Jul 2021**

Salem, R., Uttamlal, M., and Thompson, K. *Microscopic analysis of new and historic cotton textiles pre- and post-bleaching.* Microscience Microscopy Congress 2021. Poster abstract: <https://www.mmc-series.org.uk/mmc2021/abstract/microscopic-analysis-of-new-and-historic-cotton-textiles-pre-and-post-bleaching.html>.

#### **Microscopic Analysis of Historic Textile Fibres Pre- and Post-Cleaning** **Oct 2020**

Royal Microscopical Society Summer Studentship 2020. Glasgow, Scotland.

## Professional Development

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|--|-----------------|
| ▪ Microsoft Azure Fundamentals (AZ-900) Certification (Microsoft)  | <b>Oct 2023</b> |
| ▪ Tech Industry Gold Credential: Software Development (TechSkills) | <b>Jul 2023</b> |
| ▪ Introducing British Sign Language (BSL) (CPD)                    | <b>Dec 2021</b> |

## Awards & Achievements

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|--|---------------------|
| ▪ Royal Society of Chemistry Research Enablement Grant (£10,000)           | <b>May-Aug 2022</b> |
| ▪ GCU Mitigation Reboot Fund (£5000)                                       | <b>Jul-Sep 2021</b> |
| ▪ University of Strathclyde Faculty of Science Masters Scholarship (£1000) | <b>Mar 2021</b>     |
| ▪ Royal Microscopical Society Summer Studentship (£2000)                   | <b>Jun-Aug 2020</b> |
| ▪ Nancy Smilie Award 2016-2017 for Photography (Hillhead High School)      | <b>Jan 2017</b>     |
| ▪ Bronze Duke of Edinburgh's Award   | <b>Nov 2016</b>     |
| ▪ Charles Hepburn Scholarship Trust (Hillhead High School)                 | <b>Sep 2016</b>     |
| ▪ Netball Leaders Award (Hillhead High School)                             | <b>Jan 2014</b>     |

## Interests

- Web development
- Server-side development
- Going to the gym
- Swimming
- Reading
- Writing/blogging
- Cloud
- DevOps